IN THE UNITED STATES DISTRICT COURT

FOR THE WESTERN DISTRICT OF WISCONSIN

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SILICON GRAPHICS, INC.,

                         OPINION and ORDER

           Plaintiff,

                         3: 06-cv-00611-bbc

     v.

ATI TECHNOLOGIES, INC.,
ATI TECHNOLOGIES ULC, and
ADVANCED MICRO DEVICES, INC.,

           Defendants.

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Plaintiff Silicon Graphics, Inc. contends that products made by defendant ATI

Technologies Inc. infringed two of plaintiff's patents relating to advanced graphics processing

technology.   These patents are United States Patent Nos. 6,650,327 (the '327 patent) and

6,292,200 (the '200 patent).   Initially plaintiff accused defendants of infringing another

patent it owns, the 6,885,376 patent (the '376 patent), but it has moved to dismiss those

claims from the lawsuit, dkt. #331.   ATI Technologies ULC is successor-in-interest to

defendant ATI Technologies, Inc.

Now before the court are the parties' cross motions for summary judgment.

Defendants' motion for summary judgment will be granted on the following grounds: (1) the

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accused products do not indirectly infringe claims 1-6, 9-12 and 15-16 of the '327 patent

and claims 1, 4-6, 8, 11 and 16 of the '200 patent; (2) the accused products do not directly

infringe claims 3, 10-12, and 15-16 of the '327 patent; and (3) the accused products do not

indirectly infringe the '327 or '200 patents when used by Microsoft-licensed users in

combination with a Microsoft operating system. As noted above, in deciding defendants'

motion for summary judgment with respect to indirect infringement, I have determined that

there was no direct infringement of claims 1-6, 9-12 and 15-16 of the '327 patent. Because

it is implicit in this determination that plaintiff has not shown direct infringement, I will

dismiss plaintiff's complaint as it relates to direct infringement of these claims on the court's

own motion. Defendants' motion for summary judgment is denied in all other respects.

Plaintiff's motion for summary judgment on defendants' counterclaim of inequitable

conduct will be denied because disputed issues of fact remain. I have not considered

defendants' arguments related to inequitable conduct related to the OpenGL and

RenderMan technologies, because defendants never pleaded this theory of inequitable

conduct in their counterclaim. Defendants moved to strike additional facts proposed by

plaintiff that are responsive to this theory of inequitable conduct. Because I have not

considered defendants' arguments, I have not considered plaintiffs' newly proposed facts.

Accordingly, defendants' motion to strike, dkt. #295, will be denied as unnecessary.

Before turning to the undisputed facts, several matters merit discussion. First,

plaintiff did not oppose several of defendants' arguments, such as defendants' argument that they cannot be liable for indirect infringement that results from plaintiff's sales of computer systems that include the accused products. By failing to oppose these arguments, plaintiff has forfeited them. United States v. Jacques, 345 F.3d 960, 962 (7th Cir. 2003).

Next, I have not addressed several of defendants' arguments because they became moot once other arguments were resolved. For example, I have not addressed defendants' argument that the accused products cannot contribute to the infringement of claims 1-6 of the '327 patent because they have substantial non-infringing uses. It is unnecessary to do so because plaintiff failed to adduce any evidence that the accused products are capable of directly infringing claims 1-6 of the '327 patent, a necessary element of contributory infringement. Similarly, I have not considered defendants' argument that claims 3, 10-12 and 15-16 are invalid for lack of enablement because I have determined that the accused products do not infringe these claims.

Finally, I note that neither side provided adequate assistance to the court in its fact finding task. First, many of plaintiff's proposed facts purportedly explaining the function of the accused devices were unintelligible. In some cases, the facts were so baffling that defendant objected on these grounds. See, e.g., Defts.' Resp. to Plt.'s PFOF, dkt. #282, ¶ 76. (Plaintiff proposes as fact "Examples of commands sent by the CP include telling the VGT what type of primitive to draw and from where to fetch the data to do so, read and

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write register commands are passed to the RBBM, and vertex fetch instructions to the VAP and vertex fetcher."). As defendants point out, the fact itself is impossible to understand without further explanation, yet in the portion of the brief to which this fact apparently pertains, plaintiff offers a cursory three-sentence argument, which concludes "Accordingly, a triable issue exists as to whether each graphics 'rendering pipeline' includes a host processor." Dkt. #275, at 19. It is impossible to determine whether an unintelligible fact is material or not. Plaintiff may have hidden gems in statements like this, but without further explanation, they are useless in presenting a case to a lay court. Indiana Lumbermens Mutual Insurance Company v. Reinsurance Results, Inc., – F.3d – , Case No. 07-1823 (7th Cir., Jan. 16, 2008) ("There is nothing wrong with a specialized vocabulary — for use by specialists. Federal district and circuit judges, however . . . are generalists. . . . Lawyers should understand the judges' limited knowledge of specialized fields and choose their vocabulary accordingly."). Plaintiff's strategy was not a winning one; in the future, its lawyers would be well advised to present facts to the court that are intelligible to everyday speakers of English. I have included in the fact section numerous facts proposed by plaintiff that are only marginally understandable. Ultimately, few of these facts are dispositive. However, I have included them because I have discussed portions of them in the body of the opinion.

Next, both sides presented numerous legal conclusions as fact. In some cases, this was

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obvious immediately. Defts.' PFOF, dkt. #235, ¶ 84 ("Claims 1, 9-12 and 15-16 of the '327 patent are never directly infringed by consumers using ATI's products."). In others, it was more subtle, and therefore more difficult to weed fact from conclusion. Plt.'s PFOF, dkt. #244, ¶19 ("By early 1997, these inventors had reduced their framebuffer to practice."). This lack of discrimination between fact and law slowed the fact-finding process.

From the parties' proposed findings of fact, I find the following facts to be undisputed.

FACTS

A. The Parties

Plaintiff Silicon Graphics, Inc. is a Delaware corporation with its corporate offices in Sunnyvale, California. It has research and manufacturing facilities in Chippewa Falls, Wisconsin. For many years, plaintiff was in the business of making and selling computer graphics terminals, large visualization systems and high-performance workstations with a graphics component.

Defendant Advanced Micro Devices, Inc. is a Delaware corporation with its principal offices in Sunnyvale, California; it acquired the entire business of defendant ATI Technologies, Inc. on October 24, 2006, re-incorporated it and now operates it as defendant ATI Technologies ULC. Defendant ATI Technologies ULC has its principal office in

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Ontario, Canada. Defendants make and sell graphics chips and processors.

B. The '327 Patent

Plaintiff has accused defendants of infringing U.S. Patent No. 6,650,327, entitled "Display System Having Floating Point Rasterization and Floating Point Framebuffering."

1. Asserted claims

The '327 patent contains 31 claims. Plaintiff has asserted that the accused products infringe claims 1-6, 9-12, 15-18 and 21-24.

Claim 1 discloses:

1. A computer system, comprising:

a processor for performing geometric calculations on a plurality of vertices of a primitive;

a rasterization circuit coupled to the processor that rasterizes the primitive according to a rasterization process which operates on a floating point format;

a frame buffer coupled to the rasterization circuit for storing a plurality of color values; and

a display screen coupled to the frame buffer for displaying an image according to the color values stored in the frame buffer;

wherein the rasterization circuit performs scan conversion on vertices having floating point color values.

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Claim 2 discloses:

2. A computer system, comprising:

a processor for performing geometric calculations on a plurality of vertices of a primitive;

a rasterization circuit coupled to the processor that rasterizes the primitive according to a rasterization process which operates on a floating point format;

a frame buffer coupled to the rasterization circuit for storing a plurality of color values;

a display screen coupled to the frame buffer for displaying an image according to the color values stored in the frame buffer;

a texture circuit coupled to the rasterization circuit that applies a texture to the primitive, wherein the texture is specified by floating point values; and

a texture memory coupled to the texture circuit that stores a plurality of textures in floating point values.

Claim 3 discloses:

3. A computer system, comprising:

a processor for performing geometric calculations on a plurality of vertices of a primitive;

a rasterization circuit coupled to the processor that rasterizes the primitive according to a rasterization process which operates on a floating point format;

a frame buffer coupled to the rasterization circuit for storing a plurality of color values; and

a display screen coupled to the frame buffer for displaying an image according to the color values stored in the frame buffer;

wherein the floating point format is comprised of sixteen bits in a s10e5 format.

Claim 4 discloses:

4. A computer system, comprising:

a processor for performing geometric calculations on a plurality of vertices of a primitive;

a rasterization circuit coupled to the processor that rasterizes the primitive according to a rasterization process which operates on a floating point format;

a frame buffer coupled to the rasterization circuit for storing a plurality of color values;

a display screen coupled to the frame buffer for displaying an image according to the color values stored in the frame buffer; and

a fog circuit coupled to the rasterization circuit for performing a fog function, wherein the fog function operates on floating point color values.

Claim 5 discloses:

5. A computer system, comprising:

a processor for performing geometric calculations on a plurality of vertices of a primitive;

a rasterization circuit coupled to the processor that rasterizes the primitive according to a rasterization process which operates on a floating point format;

a frame buffer coupled to the rasterization circuit for storing a plurality of color values;

a display screen coupled to the frame buffer for displaying an image according

to the color values stored in the frame buffer; and

a blender coupled to the rasterization circuit which blends floating point color values.

Claim 6 discloses:

6. A computer system, comprising:

a processor for performing geometric calculations on a plurality of vertices of a primitive;

a rasterization circuit coupled to the processor that rasterizes the primitive according to a rasterization process which operates on a floating point format;

a frame buffer coupled to the rasterization circuit for storing a plurality of color values;

a display screen coupled to the frame buffer for displaying an image according to the color values stored in the frame buffer; and

logic coupled to the rasterization circuit which performs per-fragment operations on floating point color values.

Claim 9 discloses:

9. In a computer system, a method for rendering a three-dimensional image for display, comprising the steps of:

performing geometric calculations on a plurality of vertices of a plurality of polygons;

scan converting a plurality of pixels according to the vertices, wherein scan conversion is performed on floating point color values;

applying a texture to the image by reading floating point texture values stored in a texture memory;

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simulating fog effects, wherein fog is simulated by modifying floating point color values;

drawing the image for display on a display screen coupled to the computer system.

Claim 10 depends from claim 9 and discloses:

10. The method of claim 9, wherein the floating point values are comprised of sixteen bits.

Claims 11, 12, 15 and 16 depend from claim 10 and disclose:

11. The method of claim 10, wherein the floating point values are specified by a s10e5 format.

12. The method of claim 10 further comprising the step of storing the floating point color values in a frame buffer.

15. The method of claim 10 further comprising the steps of:

    reading data from the frame buffer;
    modifying the data;
    writing modified data back to the frame buffer.

16. The method of claim 10 further comprising the step of modifying color values for lighting, wherein lighting calculations operate on floating point color values.

Claim 17 discloses:

17. In a computer system, a method for operating on data stored in a frame buffer, comprised of:

storing the data in the frame buffer in a floating point format;

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reading the data from the frame buffer in the floating point format;

operating directly on the data in the floating point format; and

writing the data to the frame buffer in the floating point format;

wherein the steps of writing, storing, and reading the data in the frame buffer in the floating point format are further comprised of a specification of the floating point format, wherein the specification corresponds to a level of range and precision.

Claims 18 and 21 depend from claim 17 and disclose:

18. The method of claim 17 wherein the specification is comprised of 16 bits of data and the data are comprised of one sign bit, ten mantissa bits, and five exponent bits.

21. The method of claim 17 wherein the specification is comprised of 32 bits of data and the data are comprised of one sign bit, 23 mantissa bits, and eight exponent bits.

Claim 22 is independent and discloses:

22.   A computer system having a floating point frame buffer for storing a plurality of floating point color values;

wherein the floating point color values are written to, read from, and stored in the frame buffer using a specification of the floating point color values that corresponds to a level of range and precision.

Claims 23 and 24 depend from claim 22 and disclose:

23. The computer system of claim 22, wherein the floating point color values are comprised of 16 bits of data and the data are comprised of one sign bit, ten mantissa bits, and five exponent bits.

24. The computer system of claim 22, wherein the floating point color values

are comprised of 17 bits of data and the data are comprised of one sign bit, 11 mantissa bits, and five exponent bits.

2. Accused products

Plaintiff has accused the following graphics processing units, chipsets and graphics cards of infringing the '327 patent:

R3xx series:[1]

the Radeon 9500, 9500 PRO, 9550, 9600, 9600 XT, 9700, 9700 PRO, 9800, 9800 PRO, 9800 SE, 9800 XT, X300, X550, and X600; the Mobility Radeon 9500, 9550, 9600, 9700, X300, X 600, X600 SE; the Fire GL T2, V3100, V3200, X1, X2-256, X2-256t and Z1; the Mobility FireGL T2, T2e, V3100 and V3200; the Radeon Xpress 200 and 1100 and the All-in-Wonder 2006 Edition;

R4xx series:

the Radeon X700, X700 PRO, X700 SE, X700 XT, X800, X800 Crossfire Edition, X800 GT, X800 GTO, X800 PRO, X800 SE, X800 VE, X800 XL, X800 XT, X800 XT Platinum

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[1] The term "Rxxx" refers to various series of the accused products. Originally, plaintiff accused some of defendants' Imageon products of infringing both patents. Plaintiff no longer asserts that these products infringe.

Edition, X850 Consumer, X850 Crossfire Edition, X850 PRO, X850 SE, X850 XT and the

X850 XT Platinum Edition; the Mobility Radeon 9800, X700, X700 XL, X800 and X800

XT; the All-in-Wonder X800 XT; the Fire GL X3-256, V5000, V5100, V7100 and V7200;

and the Mobility FireGL V5000 and V5100;

R5xx series:

the Radeon X1300, X1300 PRO, X1600, X1650, X1800, X1800 CrossFire Edition, X1900

CrossFire Edition, X1950, X1950 CrossFire Edition and X1950 XTX Uber-Limited Edition;

the Mobility Radeon X1300, X1350, X1400, X1450, X1600, X1700, X1700 XT, X1800,

X1800 XT, X1900; the Fire GL V3300, V3400, V5200, V5300, V7200, V7300, V7350 and

V7400; the Mobility FireGL V5200, V5250, V7100 and V7200; the All-In-Wonder 2006

PCI Express; and the AMD Stream Processor;

R6xx series:

the Radeon HD 2400, 2600, 2900 and the Mobility Radeon HD 2300, 2400, 2400 XT,

2600 and 2600 XT.

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3. Operation of accused products

a. General operation

All of the accused products are sold as component parts. Defendants do not make complete computer systems. All of the accused products are capable of operating in either graphics or non-graphics operations. They are made and sold under industry standards for graphics image processing known as "DirectX" and "OpenGL." The products use drivers whose basic operations are specified by the DirectX and Open GL standards and by design operate in combination with DirectX and OpenGL-based applications.

Without an operating system, the programmable processors in the accused products are never programmed to perform graphics operations that translate three dimensional primitives into pixels or fragments. Without an operating system, the accused products cannot rasterize three-dimensional primitives and therefore do not have a portion of memory for storing color values during and after rasterization. The accused products can be programmed to render 3D graphics only when they are used in a computer running an operating system. Microsoft Windows is an example of such an operating system. The accused products are compatible with Microsoft Windows operating systems. The majority of users who use the accused products use licensed Microsoft Windows systems to do so.

b. Exponent bias

None of the accused products ever use a floating point format consisting of 16 bits with one sign bit, ten mantissa bits, and five exponent bits with an exponent bias of 16. The

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R3xx series of accused graphics processing units use a sixteen bit pixel shader output format with a bias of 15. An exponent bias of 15 allows a range of exponent values from -15 to 16. An exponent bias of 16 allows exponent values of -16 to 15.

c. Scan conversion and rasterization

The accused products perform scan conversion using fixed point values. The accused products use fixed point "x" and "y" spatial coordinates to translate primitives to pixels. Whether the accused products are used alone or with a display, none specify which pixels of the display screen belong to which primitives on an entirely floating point basis.

When programmed to perform 3D graphics processing, the accused graphics processing units perform geometric calculations on the vertices of a primitive.

When programmed to perform 3D graphics processing, the pixel shaders in the accused products perform calculations in floating point format. In the R5xx products, shader output can be written to memory in floating point format.

When programmed to perform 3D graphics processing, the R3xx and R4xx graphics processing units use memory for storing color values both during and after rasterization. In the R5xx products that have been programmed to perform 3D graphics processing, floating point color values enter the rasterizer block, in which the values are operated on and output in floating point format. In addition, when the R5xx products are programmed to perform

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3D graphics processing, color values output from the pixel shader can be kept in floating point format, a 16-bit floating point format can be maintained through fog and blending, and a 32-point floating format can be passed through but cannot be blended.

The pipeline in the R5xx products includes a scan converter. Color values in "block floating point form" are transmitted by the setup unit to the rasterizer block and bypass the scan converter.

When programmed to perform 3D graphics processing, the R3xx, R4xx, R5xx graphics processing units perform floating point texture operations and have a texture memory for storing these textures. When programmed to perform 3D graphics processing, the R4xx products are capable of reading floating point data from memory as a texture. When the R5xx products are programmed to perform 3D graphics processing and are engaged in "point sampling," floating point texture data can be passed from memory to the pixel shader and used in floating point format.

Fog is among the three dimensional graphics features of the accused products. In the R3xx products, the fog circuit receives outputs from the floating point color processor. The R3xx and R4xx shader output can be written in memory in floating point form. Within the R4xx graphics processing units, post-pixel shading and fog values are blended in.   The R5xx fog unit supports a floating point alpha test.

The R5xx and R6xx products are capable of writing data to the frame buffer in

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floating point format when programmed to do so.

Some of the accused products' graphics processing units include display interfaces and display outputs.

4. Use of the accused products

When defendants use these products "in-house," they do so almost exclusively on Windows-based operating systems. There is a small "Apple" group within defendants' company that uses the products on Mac operating systems. Defendants are "authorized users" and licensees of Microsoft products including Windows operating systems. In addition, defendants are "authorized users" and distributors of other Microsoft products, including Direct3D graphics drivers and DirectX-certified products. Many of defendants' customers and end users of defendants' products are also Microsoft "authorized users" and licensees.

5. Court's construction of claim terms

In an order dated October 15, 2007, I construed numerous claim terms included in the '327 patent. Dkt. #232. In the context of the '327 patent, I concluded that the following terms have the following meanings:

"Scan conversion" means "a process that specifies which pixels of the display screen

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belong to which primitives on an entirely floating point basis." "Frame buffer" means "the portion of computer memory for storing color values during or after rasterization." "Rasterization" means "a graphics operation that translates three-dimensional primitives into a set of corresponding fragments of pixels or both and fills them in." "s10e5" means "a 16 bit floating point format composed of one sign bit, ten mantissa bits, and five exponent bits with an exponent bias of 16." "Circuit" means "an interconnection of electrical hardware." "Coupled to" means "associated in such a way that power or signal information may be transferred from one to another."

6. Actions before the United States Patent and Trademark Office during prosecution of the '327 patent

a. Development of the '327 patent

In the mid-1990s, plaintiff initiated a research project known as "Bali." The Bali project was directed at the development of advanced graphics workstations. Daniel Baum worked on the Bali project and at one point was the director of the Bali project. John Airey and Mark Peercy are coinventors of the '327 patent. They were assigned to work on the Bali project. Airey and others "first started coming up with the ideas of using . . . floating point framebuffers" around 1996. Airey was inspired in his work by the Pixar animated movie "Toy Story," which used RenderMan software. In early 1997, the SGI inventors began

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implementing the technology related to the framebuffer. Sometime before September 1997, Airey and others simulated the Bali framebuffer. Airey does not believe that any other inventors at SGI were working on framebuffers at this time.

In June 1998, Airey and the other inventors sought patent protection for their work on the floating point frame buffer. The prosecution of the '327 patent spanned five years and two law firms. The '327 patent issued on November 18, 2003.

On June 16, 1998, James Hao, a lawyer from the law firm Wagner, Murabito & Hao LLP, submitted to the U.S. Patent and Trademark Office the application that issued ultimately as the '327 patent. On April 4, 2000, the Patent and Trademark Office issued an office action, rejecting some of the claims, objecting to others and allowing the remainder of the claims. On July 12, 2000, Hao responded to the office action by dropping the rejected claims and amending others to overcome the patent examiner's objections. On August 11, 2000, the Patent and Trademark Office issued a Notice of Allowability for the '327 patent application. The '327 patent application did not immediately issue as a patent. On January 25, 2002, Hao filed a request to withdraw as the responsible attorney and the patent application file to the Sterne Kessler law firm.

On March 21, 2002, plaintiff filed a "Power of Attorney" with the Patent and Trademark Office appointing the Sterne Kessler firm to act of its behalf with respect to the '327 application. On April 5, 2002 and lawyer from the law firm filed various procedural

papers with the Patent and Trademark Office in a effort to "revive" the '327 application. On August 28, 2002, the Patent and Trademark Office revived the '327 patent application for further prosecution.

On February 12, 2003, one of the Sterne Kessler's lawyers, Michael Messinger, filed a Request for Continued Examination along with a Petition to Withdraw from Issue and an Information Disclosure Statement of the application. He asked that the '327 application "be withdrawn from issue for considering the accompanying request for continued examination in compliance with 37 CFR § 1.136. This petition is in order to permit consideration of the accompanying information disclosure statement." Messinger filed a Supplemental Information Disclosure Statement on March 17, 2003, disclosing additional prior art relevant to the '327 patent and an Amendment to the claims of the '327 patent.

On May 1, 2003, the Patent and Trademark Office issued a second Notice of Allowability for the '327 patent application.

During prosecution of the '327 patent, plaintiff filed a continuation application.

Messinger has been a clerk or patent lawyer at the Sterne Kessler firm since 1994. Messinger has never been disciplined by the Patent and Trademark Office or been accused of violating his duty of candor. Messinger conferred with junior attorneys working on the '327 patent prosecution as early as 2002. Messinger's name appears for the first time in the

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file history for the '327 patent in February 2003; he participated in the prosecution for ten

months before the patent's issuance on November 18, 2003. His name appears on at least

six documents filed with the Patent and Trademark Office during the prosecution of the '327

patent, but Messinger did not personally perform any substantive work on the '327

application. He never billed more than .5 hours on any day for his work on the '327 patent

application.

b. The Baum application and '083 patent

Daniel Baum was a hardware director for the Bali project. On September 25, 1997,

the Baum patent application was filed. (It later issued as U.S. Patent No. 6,567,083 (the

'083 patent)). The application addressed illumination in computer graphics shading and

animation. The application makes one reference to a "floating point framebuffer." It

incorporated by reference a 1993 edition of OpenGL. Figure 2 of the '327 patent is similar

to Figure 6 of the '083 patent. A similar diagram is included in the OpenGL Programming

Guide.

Messinger worked on the Baum patent application from 1997 until 2001. In August

and October of 1998, Messinger filed information disclosure statements identifying a total

of thirty references for the examiner's consideration. In February 1999, Messinger filed a

supplemental disclosure statement, in which he identified two additional references. On

April 21, 1999, the Patent and Trademark Office rejected all claims of the '083 patent application. In August 1999, Messinger filed an amendment and reply requesting that the patent examiner withdraw his rejection of the '083 patent application. On November 1, 1999, the patent examiner issued a final office action rejecting all of the claims of the '083 patent application.

Following the rejection, Messinger filed a request for a continued prosecution, attended a personal interview with the examiner and submitted remarks requesting allowance of the application. On September 1, 2000, the examiner issued an office action, in which three claims were allowed and the remainder were rejected or objected to. In 2001, Messinger filed a request for reconsideration of the patent examiner's notice of abandonment, which the examiner sent because he believed that Sterne Kessler had not responded to the September 2000 office action.

On September 28, 2001, plaintiff assigned all rights, title and interest in the Baum patent application, along with more than two hundred other applications and patents, to Microsoft. Messinger does not recall thinking about the Baum application after it was transferred to Microsoft. He was not informed about what happened to the application after it was assigned. Messinger believed that the "thrust" of the Baum application was a "shading vector."

On November 27, 2001, Sterne Kessler transferred the file to the law firm of

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Woodcock Washburn LLP.   On February 4, 2002, Woodcock Washburn lawyer Steven Rocci was listed as the "Attorney of Record" for the '083 patent. Rocci handled prosecution of the '083 application in 2002 and 2003. The '083 patent, titled "Method, System, And Computer Program Product For Providing Illumination In Computer Graphics Shading And Animation" was issued in May 2003. It does not share any inventors with the '327 patent. Microsoft is the owner of this patent by assignment.

C. The '200 Patent

1. Asserted claims

Plaintiff has accused defendants of infringing U.S. Patent No. 6,292,200, entitled "Apparatus and method for utilizing multiple rendering pipes for a single 3-D display." The '200 patent contains 18 claims; claims 1 and 11 are independent. Plaintiff has asserted that the accused products infringe claims 1, 4, 5, 6, 8, 11 and 16 of the '200 patent. Claims 4-6 and 8 are dependent from claim 1. Claim 16 depends from claim 11.

Claim 1 discloses:

1. A computer system comprising:

a plurality of rendering pipes for rendering pixels of an image, wherein each of the rendering pipes comprises a host processor having an application program issuing graphics commands, a geometry circuit coupled to the host processor for processing primitives, a rasterizer coupled to the geometry circuit for generating pixel data, a frame buffer coupled to the rasterizer which stores

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the pixel data, an interface coupled to the rasterizer that accepts requests from the transmission medium and outputs pixel data;

a transmission medium coupling together each of the plurality of rendering pipes;

a controller coupled to one of the rendering pipes which coordinates pixel information of the image between each of the plurality of rendering pipes, wherein each of the rendering pipes is capable of rendering pixels for an entire frame or portions thereof;

a memory coupled to the controller for storing the pixel information;

a display coupled to the memory for displaying the image.

Claim 4 discloses:

4. The computer system of claim 1, wherein the rendering circuit includes a local memory for storing pixel data generated locally.

Claim 5 discloses:

5. The computer system of claim 4, wherein the controller requests the pixel data stored in the local memory.

Claim 6 discloses:

6. The computer system of claim 5, wherein the controller merges pixel data received from a plurality of rendering circuits before drawing the image for display.

Claim 8 discloses:

8. The computer system of claim 1 further comprising a single display driver which drives the display.

Claim 11 discloses:

11. In a computer system, a method of rendering a three-dimensional image for display comprising the computer-implemented steps of:

rendering pixels of a three-dimensional image, wherein a plurality of rendering circuits are used to render portions of a single frame and each of the rendering pipes is capable of rendering pixels for an entire frame or portions thereof;

executing an application program on a host processor which issues graphics commands;

processing vertices by a geometry circuit coupled to the host processor;

generating pixel data through a rasterizer coupled to the geometry circuit;

storing the pixel data in a frame buffer coupled to the rasterizer;

accepting requests from the transmission medium for the pixel data;

outputting the pixel data onto the transmission medium;

storing pixel data in a plurality of memories, each rendering circuit storing pixel data generated in a local memory;

transmitting a request through a transmission medium coupling together each of the plurality of rendering circuits;

transmitting pixel data from one of the rendering circuits through the transmission medium to a frame buffer in response to the request;

merging pixel data received from a plurality of the rendering circuits into a frame;

driving a display coupled to the frame buffer to display the three-dimensional image.

Claim 16 discloses:

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16. The method of claim 11 further comprising the step of driving the display with a single driver.

2. Accused products

Plaintiff has accused the following of defendants' products of infringing the '200 patent: the Radeon Cross Fire Edition and compatible Radeon cards including X1950 and CrossFire editions X850, X1300, X1600, X1650, X1800 and X1900.

3. Operation of the accused products

The accused products do not contain multiple host processors that each run a graphic program and issue high-level commands. The CrossFire products are graphics cards that were designed to be used with a shared host processor. However, dual core systems featuring CrossFire products are commercially available. There is no evidence that any end-user of the accused products has configured defendants' CrossFire products in such a way that each graphics card is coupled to a separate host processor or that any end users actually use the CrossFire products in this way. Even if an end user incorporates two CrossFire cards with a dual core processor, each "core" is not dedicated to a single CrossFire card. Plaintiff's expert "optimized" the ATI graphics drive to be able to run in multiple threads on a dual core system thereby allowing parallelism.

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4. Claim construction

In the claim construction order, I concluded that the following terms have the following meanings in the context of the '200 patent: "host processor" means "a processor that runs a graphics program and issues high-level commands"; "plurality of rendering pipes" and "plurality of rendering circuits" mean "two or more graphics subsystems each of which includes a host processor, a geometry engine, a rasterizer, a frame buffer, and a display [interface] unit."

D. The Parties' Business Relationship

Defendants and plaintiff had an ongoing business relationship for more than four years between 2001 and 2006. Plaintiff bought accused products from defendants and incorporated the products in their own systems. In this time period, plaintiff participated in discussions with defendants during product development, purchased nearly 5,000 of the accused products, incorporated these products into the systems that it made and sold and provided its customers with support for these systems.

Plaintiff first approached defendants in late 2001 regarding a purchasing relationship for defendants' R3xx-series graphics processing units. At this time, defendants had completed development of the R3xx-series graphics processing units and were ready to begin manufacturing them. Defendants "launched" the series in July 2002.

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Following their initial contact, the parties held a series of meetings and exchanged information regarding defendants' products and the parties' business needs and plans.   In a May 2002 letter to defendants from plaintiff's "Product Line Manager," plaintiff described a "partnership" between the companies as "powerful" and providing "strong opportunity and benefit" for both companies. The letter suggested that defendants adapt their "pricing and overall position to [one] [] more appropriate for a close, mutual partner as opposed to a low volume customer." The letter described the following two options for the parties' ongoing association, "As a simple customer of ATI technology we will position them as Onyx successes with no talk of ATI's contributing role. As a close partner, we can consider aiding ATI in press releases and similar activities to ensure that ATI's role as an underpinning delivers appropriate value back to ATI."

Throughout the negotiations in 2001 and 2002, plaintiff was aware of the floating point capabilities of defendants' Rxxx-series products.

On August 28, 2002, plaintiff and defendants signed a Master Purchase and Sale Agreement that established a four-year, non-exclusive purchasing relationship.   The agreement contained a merger clause, which indicated that prior communications were irrelevant to its terms. In the agreement, defendants agreed to sell products to plaintiff and provide plaintiff with source code and field and engineering support to help it develop compatible drivers. In exchange for discounted pricing from defendants, plaintiff marketed

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the companies' products together, including the accused products, and helped to promote the adoption of floating point formats in the market. Plaintiff was aware that defendants' products were available generally in the marketplace; through its agreement with defendants it obtained early access to new products before they became available broadly.

Plaintiff began purchasing defendants' products under the agreement in 2002. In mid-2003, plaintiff began introducing new systems designed to work with defendants' Rxxx-series graphics processing units. Plaintiff's Onyx4 Ultimate Vision system and Prism system were designed to work with defendants' FireGL cards. Plaintiff touted this as a valuable feature of the systems and at least one industry commentator described the Prism as a "SGI-ATI product." Between 2002 and August 2006, plaintiff purchased nearly 5,000 accused products from defendants. In August 2006, plaintiff terminated the support portion of the prior agreement with defendants.

E. Plaintiff's Bankruptcy Proceedings

On February 28, 2006, plaintiff sent defendants a letter notifying defendants that plaintiff had "reason to believe that ATI Technologies System Corp may violate" a patent described as a "Floating Point Frame Buffer patent." Plaintiff stated that it would "like to discuss the terms of a possible license from SGI to ATI for this technology." However, plaintiff did not identify a patent number or accuse any specific products of infringement.

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Between March and May 2006, plaintiff sent several emails to defendants, in which it identified patents, including the '327 and '200 patents, that "might [be] of interest" to defendants.

On May 8, 2006, plaintiff filed a voluntary petition for relief under Chapter 11 of the bankruptcy code. Defendants were one of plaintiff's unsecured creditors and were represented in the bankruptcy proceedings by the unsecured creditor's committee.

On June 21, 2006, plaintiff submitted to the bankruptcy court its "Summary of Schedules" of contingent and unliquidated claims. In exhibit B-22 to the summary plaintiff disclosed a "confidential patent infringement" in an "undetermined amount." In addition, the disclosure statement included the following statement

> SGI's business will be affected by its success in protecting proprietary information and obtaining necessary licenses. Litigation . . . could expand or reduce the extent to which SGI or its competitors are able to protect intellectual property or could require significant changes in product design . . . . The computers industry has seen a substantial increase in litigation with respect to intellectual property matters, and we have been engaged in several intellectual property lawsuits both as plaintiff and defendant. SGI is in discussion with several parties that have asserted intellectual property infringement claims, and expect that litigation of this sort will reoccur from time to time.

In response to plaintiff's disclosure, the bankruptcy court issued an order in which it stated "It is hereby found that: 1. The Disclosure Statement contains adequate information within the meaning of section 1125 of the Bankruptcy Code." Plaintiff did not

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disclose the existence of the '376 patent to the bankruptcy court or its creditors.

On June 27, 2006, Barry Weinert, plaintiff's vice president and general counsel, sent an email to defendants' senior patent counsel, Matthew Vella, regarding plaintiff's bankruptcy proceedings. That email stated:

> In open court yesterday, we presented an agreement that we have reached with the secured bondholders, the largest holder of bonds, and the Official Unsecured Creditors Committee. That agreement established the distribution under our plan to each of these groups. These are the three major players in our case. Our amended plan and Disclosure Statement should be filed this week.
>
> This means the distribution under the proposed plan is set and that any agreement we reach with ATI will not impact that agreement.

On June 30, 2006, plaintiff filed a disclosure statement under 11 U.S.C. § 521(a)(1) and verified to the bankruptcy court that the "liquidation of all of its intellectual property is estimated at between 22.2 million dollars and 46.0 million dollars." (It is not clear from the parties' proposed findings of fact whether two separate disclosure forms were filed or whether the June 30, 2006 disclosure form was an amended version of the June 21, 2006 form. The parties do not make anything of this, so neither will I.)

On September 15, 2006, the bankruptcy court confirmed plaintiff's Chapter 11 plan for reorganization. Plaintiff emerged from bankruptcy protection on October 17, 2006.

On October 23, 2006, plaintiff filed this lawsuit against defendants. During the course of this lawsuit, plaintiff has described its pre-suit investigation as "thorough," "time-

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consuming," "expensive," and "detailed." It has stated that this investigation took "many months."

Plaintiff relied on the work of CRA International in evaluating its patent portfolio and developing the liquidation value of its intellectual property and patent portfolio. In its application for compensation, CRA International stated that it "performed work commonly described as 'patent analytics' to understand the patent landscape related to the various technology buckets and to better assess the strength of the SGI patents. This analysis helped to identify other companies that may be potentially infringing the SGI patents . . . ."

At some point during the bankruptcy proceedings, plaintiff filed an application with the bankruptcy court for an order authorizing the retention of Morgan Lewis Bockius LLP as "special intellectual property counsel" and the retention of CRA International, Inc. as "intellectual property valuation consultants." Plaintiff had retained Morgan Lewis Bockius LLP with an engagement letter dated February 27, 2006, and signed in March 2006. Morgan Lewis Bockius LLP received compensation of more than $500,000 for the work it performed for plaintiff between May 8, 2006 and September 19, 2006.

F. OpenGL

The OpenGL Graphics System: A Specification (Version 1.1) was published on March 4, 1997. (Defendants proposed as fact that the specification was published on or before

March 4, 1997. DPFOF, Reply, dkt. # 281, at ¶407. Plaintiff disputed this fact on the ground that defendants lacked evidence that it was published *before* March 4. Id. However, plaintiff did not deny that the document was published on that date. Therefore, I have treated it as undisputed.) Diagrams used in the OpenGL specification were used in the specification for the '327 patent. The OpenGL specification discloses a "state machine" consisting of at least a central processing unit and a frame buffer. The OpenGL specification describes commands that affect the operation of computer graphics hardware and software. One of the features described in the OpenGL specification is an "accumulation buffer." The accumulation buffer is a portion of computer memory for storing color values during or after rasterization. The OpenGL specification discusses the use of floating point color values at various stages, including in the accumulation buffer.

Section 4.2.3 of the Open GL specification is titled: "Clearing the Buffers." A portion of this section describes a method for clearing the accumulation buffer. It states that this method "takes four floating point arguments that are the values, in order, to which to set the R, G, B, and A values of the accumulation buffer (see the next section). These values are clamped to the range [-1, 1] when they are specified."

Section 4.2.4 of the OpenGL specification is titled "The Accumulation Buffer." (The parties dispute several characterizations of this specification. Therefore, I have included the text itself.) The specification states, in part, that

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Each portion of a pixel in the accumulation buffer consists of four values: one for each of R, G, B, and A. The accumulation buffer is controlled exclusively through the use of:

void **Accum**(enum *op*, float *value*) ;

(except for clearing it). *op* is a symbolic constant indicating an accumulation buffer operation, and *value* is a floating-point value to be used in that operation. The possible operations are ACCUM, LOAD, RETURN, MULT, and ADD.

The accumulation buffer operations apply identically to every pixel, so we describe the effect of each operation on an individual pixel. Accumulation buffer values are taken to be signed values in the range [-1, 1]. Using ACCUM obtains R, G, B, and A components from the buffer currently selected for reading (section 4.3.2). Each component, considered as a fixed-point value is multiplied by *value*. The results of this multiplication are then added to the corresponding color component currently in the accumulation buffer, and the resulting color value replaces the current accumulation buffer color value. The LOAD operation has the same effect as ACCUM, but the computed values replace the corresponding accumulation buffer components rather than being added to them.

The RETURN operation takes each color value from the accumulation buffer, multiplies each of the R, G, B, and A components by *value*. The resulting color value is placed in the buffers currently enabled for color writing as if it were a fragment produced from rasterization, except that the only per-fragment operations applied are the pixel ownership test and, if enabled, dithering (section 4.1); color masking (section 4.2.2) is also applied.

The MULT operation multiplies each R, G, B, and A in the accumulation buffer by *value* and then returns the scaled color components to their corresponding accumulation buffer locations. ADD is the same as MULT except that *value* is added to each of the color operations.

Section 2.1 of the OpenGL specification states

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The GL must perform a number of floating-point operations during the course of its operation. We do not specify how floating point numbers are to be represented or how operations on them are to be performed. We require simply that the numbers' floating point parts contain enough bits and that their exponent fields are large enough so that individual results of floating-point operations are accurate to about 1 part in 10^5. The maximum representable magnitude of a floating-point number used to represent positional or normal coordinates must be at least 2^{32}; the maximum representable magnitude for colors or texture coordinates must be at least 2^{10}. The maximum representable magnitude for all other floating-point values must be at least 232. . . . . Most single precision floating-point formats meet these requirements.

G. Plaintiff's Licensing Agreement with Microsoft

Plaintiff has granted Microsoft rights to its patents, including the '327 and '200 patents. The license gives Microsoft rights in plaintiff's patents "issued or issuing on patent applications entitled to an effective filing date prior to September 30, 2002." This license includes the '327 patent and the '200 patent. The license authorizes Microsoft to "exercise any and all legal rights" with respect to all current and future products of Microsoft until the last of the covered patents expires.

Section 1.1 of the agreement provides that

Authorized Licensee shall mean a third party (including without limitation an original equipment manufacturer (OEM), replicator, distributor, retailer or user) that is licensed by a party hereto to exercise any legal rights with respect to a Subject Product of such party, including without limitation using, selling or otherwise distributing such Subject Product either alone or in combination with other products.

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Section 2.4 of the agreement provides that

SGI, on behalf of itself and its Subsidiaries, hereby represents, warrants and irrevocably covenants that MICROSOFT'S Authorized Licensees of Subject Products shall be immune from any claim or suit under SGI's Subject Patents for the formation, use, sale, license, importation of other distribution or transfer of any combination of third party products with the Subject Product originally provided by MICROSOFT, but only to the extent that (i) for any given patent claim of SGI's Subject Patents, such claim would not be directly infringed by the third party product separate and apart from the combination with the Subject Product, and (ii) MICROSOFT'S provision of said Subject Product would, absent this Agreement, result in MICROSOFT'S liability for infringement (including, without limitation, contributory infringement) of said claim. The determination of infringement in (ii) shall assume the existence of any necessary knowledge or intent required to constitute infringement.

OPINION

Plaintiff alleges that defendants directly infringe the '327 and '200 patents by their in-house use of computer systems that incorporate allegedly infringing graphics processing units, chips and chip-sets. In-house use seems like an odd basis on which to ground such protracted, multi-million dollar litigation. Thus, perhaps more important, plaintiff alleges that defendants have induced or contributed to infringement of the '327 and '200 patents by others, in violation of 35 U.S.C. § 271 (b) and (c).

Defendants have moved for summary judgment on several grounds. As an initial matter, they contend that neither their use or anyone else's use of the accused products infringes plaintiff's rights under the '327 or '200 patents because none of the accused

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products satisfy all of the claim terms.

A. Burdens at Summary Judgment

As the party moving for summary judgment, defendants have the initial burden to
identify the legal bases for their motion and point "to those portions of the record that [they
believe] demonstrate the absence of a genuine issue of material fact." Novartis Corp. v. Ben
Venue Laboratories, Inc., 271 F.3d 1043, 1046 (Fed. Cir. 2001) (citing Celotex Corp., 477
U.S. at 323). Once this is done, plaintiff may not avoid summary judgment "simply by
insisting that a genuine issue of material fact exists or even by proffering some evidence"; to
avoid summary judgment, plaintiffs must present evidence "that a reasonable jury could find
sufficient to prove" that defendants' products contain all the limitations in the asserted
claims. Smith & Nephew, Inc. v. Ethicon, Inc., 276 F.3d 1304, 1316-17 (Fed. Cir. 2001)
(Michel, J., dissenting); see also TechSearch, L.L.C. v. Intel Corp., 286 F.3d 1360, 1372
(Fed. Cir. 2002) ("general assertions of facts, general denials, and conclusory statements are
insufficient," . . . "the party opposing the motion for summary judgment . . . must point to
an evidentiary conflict created on the record, at least by a counter-statement of a fact set
forth in detail in an affidavit by a knowledgeable affiant").

B. Infringement

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As noted above, defendants' first motion for summary judgment was directed to the initial claims plaintiff had identified and related to its theories of direct infringement. In deciding that motion, I concluded that the accused products were incapable of directly infringing claims 1, 2 and 4-6 of the '327 patent and claims 1, 4-6, 8 and 11 of the '200 patent. This motion for summary judgment is directed primarily to plaintiff's claims that defendants have induced others to infringe the '327 and '200 patents and have contributed to this infringement by their production of the accused products. In addition, defendants assert that none of the accused products directly infringe the "newly asserted" claims 3, 10, 11, 12, 15 and 16 of the '327 patent.

The standards for patent infringement are well known. Under 35 U.S.C. § 271(a), "whoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent . . . infringes the patent." A process or method infringes a patent claim if it contains every limitation set forth in that claim, either literally or by equivalence. Johnson Worldwide Assocs. v. Zebco Corp., 175 F.3d 985, 988 (Fed. Cir. 1999). "A patent is infringed if any claim is infringed." Pall Corp. v. Micron Separations, Inc., 66 F.3d 1211, 1220 (Fed. Cir. 1995).

The parties use the term "indirect infringement" to refer to the types of infringement prohibited by 35 U.S.C. § 271(b) and (c). Section 271(b) prohibits anyone from "actively induc[ing]" infringement and § 271(c) prohibits "contributory" infringement, which is

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selling a "component" of a patented device when the seller knows that the component is especially designed "for use in an infringement" of the patent and that there is not a "substantial noninfringing use" for the component. To prevail ultimately on either theory, a patentee must demonstrate that direct infringement by end-users has occurred. DSU Medical Corp. v. JMS Co., 471 F.3d 1293 (Fed. Cir. 2006) ("the patentee always has the burden to show direct infringement for each instance of indirect infringement"); Joy Technologies, Inc. v. Flakt, Inc., 6 F.3d 770, 774 (Fed. Cir. 1993) ("Liability for either active inducement of infringement or contributory infringement is dependent upon the existence of direct infringement.").

In addition to a showing of direct infringement, a patentee pursuing claims under § 271(b) must show that "that the alleged infringer knowingly induced infringement and possessed specific intent to encourage another's infringement." Minnesota Mining & Manufacturing Co. v. Chemque, Inc., 303 F.3d 1294, 1304-05 (Fed. Cir. 2002). Section 271(c) requires "a showing that the alleged contributory infringer knew that the combination for which his component was especially designed was both patented and infringing." Aro Manufacturing Co. v. Convertible Top Replacement Co., 377 U.S. 476, 488-89 (1964).

1. '327 patent

a. s10e5

Claim 3 of the '327 patent discloses "A computer system, . . . wherein the floating point format is comprised of sixteen bits in a s10e5 format." Claim 11 of the '327 patent is a method claim, which discloses "The method of claim 10, wherein the floating point values are specified by a s10e5 format." I have construed "s10e5" to mean "a 16 bit floating point format composed of one sign bit, ten mantissa bits, and five exponent bits with an exponent bias of 16."

Defendants contend that their products cannot infringe claims that require "s10e5" format because none of the accused devices use an exponent bias of 16. Instead, the accused devices always specify an exponent bias of 15. Because the accused devices do not contain all of the claim elements, they cannot literally and directly infringe claims 3 and 11. Without a showing that the products are capable of direct infringement, they cannot indirectly infringe either.

Plaintiff does not deny that the accused products do not literally infringe claims 3 and 11, given the court's construction of the term "s10e5." Instead, plaintiff first suggests that the construction of the term is unduly limiting and rehashes arguments it made during claim construction. These arguments provide no reason to revisit claim construction issues at this late stage.

Next, plaintiff asserts that the jury should be allowed to consider a doctrine of equivalents argument: the difference between a bias of 15 and a bias of 16 is insubstantial

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because both "seek to center the exponent range around zero allowing for both fractions and

large values." Pltf.'s Resp. Br., dkt. #275, at 14. This argument fails for two reasons. First,

plaintiff has not developed the argument in a meaningful way (in its entirety, the discussion

takes up half a page). Plaintiff simply asserts that the biases have a similar effect and that

the determination should be left to the jury. This is insufficient and I could disregard the

argument on this basis alone. Central States, Southeast and Southwest Areas Pension Fund,

181 F.3d 799, 808 (7th Cir. 1999) (Arguments "not developed in any meaningful way are

waived.")

However, there is another, more important problem with this argument. Plaintiff

stated explicitly in its discovery disclosures that it did not intend to pursue any doctrine of

equivalents arguments. In response to interrogatories from defendants regarding its theories

of infringement, plaintiff never mentioned the doctrine of equivalents, and never

supplemented its responses to raise the doctrine. In fact, plaintiff continues to assert in its

brief in response to defendants' motion for summary judgment that it is pursuing only

arguments regarding literal infringement. Just three pages before plaintiff raises its doctrine

of equivalents argument regarding exponent biases, plaintiff states in a footnote that "Based

on the analysis to date and in the absence of fuller discovery, SGI believes that infringement

is literal. To the extent required, SGI reserves the right to assert doctrine of equivalents

infringement." Pltf.'s Response Brief, dkt. #275, at 11. At this stage in the litigation, the

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time for "reserving" arguments is long past. Having maintained all along that it intends to

argue only that the defendants' products literally infringe its patents, plaintiff will be held

to this position. Nike Incorporated v. Wolverine World Wide, Inc., 43 F.3d 644, 648 (Fed.

Cir. 1994).

Therefore, I conclude that the accused products do not indirectly infringe claims 3

and 11 of the '327 patent because none meet the claims' "s10e5" limitation.

b. Scan conversion

Next, claim 1 of the '327 patent discloses "A computer system . . . wherein the

rasterization circuit performs scan conversion on vertices having floating point color values."

Claim 9 and the claims that depend from it, claims 10 through 16, disclose "a method for

rendering a three-dimensional image for display, comprising steps of . . . scan converting a

plurality of pixels according to the vertices, wherein scan conversion is performed on floating

point color values." "Scan conversion" has been construed to mean "a process that specifies

which pixels of the display screen belong to which primitives on an entirely floating point

basis."

Defendants assert that the accused products cannot indirectly infringe any of these

claims because there is no direct infringement. They have moved for summary judgment on

the grounds that the accused products do not indirectly infringe claim 1 and do not directly

or indirectly infringe independent claim 9 and dependent claims 10-12 and 15-16.

Defendants assert, and propose as fact, that the accused products do not perform scan conversion "on an entirely floating point basis" because all perform scan conversion using fixed point values. If plaintiff had evidence that the accused products do <u>not</u> perform scan conversion on fixed point values, and instead do so on an entirely floating point basis, now would be the time to present that evidence, but it has not done so.

Instead, plaintiff makes a short and muddled argument for reconsidering construction of the term "scan conversion," asserting that "what must be entirely in floating point is color values." Plt.'s Br., dkt. #275, at 15. Plaintiff concludes this short discussion by saying that, if "the proper scope" is applied to scan conversion, "questions of fact remain to be tried" because "the color values that enter the scan converter in floating point exit in floating point." <u>Id.</u> at 16. Thus, plaintiff appears to concede that the accused products do not perform scan conversion on an entirely floating point basis and that plaintiff's only ground for continuing to assert infringement is that some of defendants' products use color values that enter and exit the scan converter in floating point format.

Therefore, it is not surprising that none of the facts cited by plaintiff put into dispute defendants' proposed fact that the accused products perform scan conversion on a fixed point basis. Instead, the proposed facts plaintiff identifies as "relevant" relate to the products' use of floating point values in the pixel shader and the fog and blending processes

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and are directed only to the R5xx series of products.

Because plaintiff has adduced no evidence that any of the accused products use a process "that specifies which pixels of the display screen belong to which primitives on an entirely floating point basis," defendants' motion for summary judgment will be granted.

c. Rasterization

Claims 1 through 6 of the '327 patent disclose, in part, "A computer system, comprising . . . a rasterization circuit coupled to the processor that rasterizes the primitive according to a rasterization process which operates on a floating point format." "Rasterization" has been construed to mean "a graphics operation that translates three-dimensional primitives into a set of corresponding fragments of pixels or both and fills them in." Defendants assert that the accused products cannot indirectly infringe claims 1 through 6 of the '327 patent because none use floating point values when translating primitives into a set of pixels and fragments. They have moved for summary judgment on this ground.

The '327 patent explains that rasterization includes several steps. The court's construction reflects this, identifying two specific aspects: (1) translating three-dimensional primitives into a set of corresponding pixels and fragments and (2) filling in those pixels or fragments. In the context of the '327 patent, "filling in" the pixels and fragments may include several additional steps, which include assigning color values and texture or fog

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attributes.

Plaintiff concedes that the accused products perform the first step using fixed point values, but has adduced evidence that the R5xx products use floating point format during the second step, specifically when performing fog and blending functions, and use floating point color values in the pixel shader. It argues that because a "significant portion[]" of the rasterization process is performed in floating point, the products infringe claims 1 through 6 of the '327 patent.

However, claims 1 through 6 state that the "rasterization process" operates on a floating point format. They do not say that "some portions of the rasterization process" operate on a floating point format, "significant portions of the rasterization process" operate on a floating point format or that "the majority of the rasterization process" operates on a floating point format. Instead, the claims require that *the process as a whole* operates on a floating point format. Plaintiff concedes that in the accused products, at least one portion of the rasterization process occurs on a fixed point basis. Therefore, the accused products cannot infringe claims 1 through 6 of the '327 patent, and defendants' motion will be granted on these grounds as well.

2. '200 patent

During the first round of summary judgment in this case, defendants moved for

summary judgment on the ground that none of the accused products contain a "host processor." All of the asserted claims of the '200 patent include a limitation of a "a host processor" that issues graphics commands. I have construed "host processor" to mean "a processor that runs a graphics program and issues high-level commands." Dkts. ##181 at 30; 232 at 43. In response to defendants' first motion, plaintiff adduced no evidence that any of the accused products include a "host processor." Therefore, I concluded that no accused product could directly infringe the asserted claims of the '200 patent.

Now plaintiff asserts that the accused products indirectly infringe the '200 patent when placed by end-users in computer systems that contain dual-core processors. As an initial matter, I note that plaintiff failed to disclose this theory of infringement to defendants at any time during discovery. It did not include it in initial responses to interrogatories or in amended responses. Therefore, it would be appropriate to bar plaintiff from asserting this theory now to overcome a motion for summary judgment. E.g., Briggs & Stratton Corp. v. Kohler Co., 398 F. Supp. 2d. 925, 930 (W.D. Wis. 2005) (party that fails to disclose information required by Rule 26(e) may not use that information to overcome motion or at trial.).

However, plaintiff's claims regarding the '200 patent fail for a more fundamental, substantive reason: they are not based on any evidence of any direct or indirect infringement. At claim construction, I construed the terms "rendering pipes" and "rendering

circuits," which appear in claims 1 and 11 of the '200 patent to mean "graphics subsystems . . . which include[s] a host processor, a geometry engine, a rasterizer, a frame buffer, and a display [interface] unit." To meet the limitations of the claims of the '200 patent, therefore, each graphics rendering circuit must include a host processor. The accused products do not contain host processors. Even when combined with a dual core-processor system, the accused products do not infringe because each "graphics subsystem" does not contain an independent host processor.

Finally, I note that plaintiff has failed to adduce evidence regarding any actual end-users' infringing use of the accused products. Instead, its expert avers that he was *able* to create an infringing system by "optimizing" the ATI graphics drive to run in multiple threads on a dual core system thereby allowing parallelism. It is undisputed that the CrossFire products were designed for use with shared host processors. This use would not infringe the claims of the '200 patent. Plaintiff can point to no specific instances of direct infringement by the accused products and instead attempts to rely on its experts' creation of an infringing system. This is insufficient to meet its burden at summary judgment. ACCO Brands, Inc. v. ABA Locks Manufacturing Co., 501 F.3d 1307, 1312 (Fed. Cir. 2007) (to prove induced infringement, party must establish "'first that there has been direct infringement, and second that the alleged infringer knowingly induced infringement and possessed specific intent to encourage another's infringement,'") (quoting Minn. Mining & Mfg. v. Chemque, Inc., 303

F.3d 1294, 1304-05 (Fed. Cir. 2002)). Hypothetical instances of direct infringement are

insufficient to establish vicarious liability or indirect infringement.). Therefore, defendants'

motion will be granted on these grounds.

D. Authorized Use

Defendants contend that the use of the accused products in computer systems sold

by plaintiff and in computer systems that include Microsoft operating systems has been

"authorized" and thus cannot constitute direct infringement. Therefore, they argue that this

use cannot provide the basis for claims of indirect infringement.

In its brief in response to defendants' motion for summary judgment, plaintiff did not

respond to defendants' assertion that they are not liable for direct infringement resulting

from the use of the accused products in computer systems sold by plaintiff. Therefore, I

conclude that plaintiff has waived its right to oppose this argument. Wojtas v. Capital

Guardian Trust Co., 477 F.3d 924, 926 (7th Cir. 2007) ("A failure to oppose an argument

permits an inference of acquiescence and 'acquiescence operates as a waiver.'") (citing

Cincinnati Insurance Co. v. East Atlantic Insurance Co., 260 F.3d 742 (7th Cir. 2001)).

Next, *licensed* use of a product does not constitute direct infringement and, therefore,

does not support a finding of indirect infringement. Aro Manufacturing Co. v. Convertible

Top Replacement Co., 377 U.S. 476, 497-99 (1964) ("[I]f the purchaser and user could not

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be amerced as an infringer certainly one who sold to him . . . cannot be amerced for contributing to a non-existent infringement."). Plaintiff has a licensing agreement with Microsoft that includes the '327 and '200 patents. Therefore, the question is whether those who use Microsoft operating systems in combination with the accused devices could be liable for direct infringement or whether their use of the products is licensed under the agreement.

Plaintiff's licensing agreement with Microsoft states, in the relevant portion, that

> . . . MICROSOFT'S Authorized Licensees of Subject Products shall be immune from any claim or suit under SGI's Subject Patents for the formation, use, sale, license, importation of other distribution or transfer of any combination of third party products with the Subject Product originally provided by MICROSOFT, but only to the extent that (i) for any given patent claim of SGI's Subject Patents, such claim would not be directly infringed by the third party product separate and apart from the combination with the Subject Product, and (ii) MICROSOFT'S provision of said Subject Product would, absent this Agreement, result in MICROSOFT'S liability for infringement (including, without limitation, contributory infringement) of said claim. The determination of infringement in (ii) shall assume the existence of any necessary knowledge or intent requirements required to constitute infringement.

Thus, Microsoft-licensed users do not infringe plaintiff's patents unless the claim would be infringed by a third-party product *separately and apart from* its combination with a licensed product. (Part ii of the agreement appears to boil down to a requirement that direct infringement occurred in the first instance.) The relevant licensed product in this case is the Microsoft Windows operating system. The accused products cannot infringe plaintiff's patents when they are not used in combination with an operating system. Without an

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operating system, the accused products cannot rasterize three-dimensional primitives and, therefore, do not have memory required for storing color values during and after rasterization. Moreover, the accused products can be programmed to render 3D graphics only when they are used in a computer running an operating system.

Plaintiff argues that the products' mere capability to render 3D graphics in the manner disclosed in its patents is sufficient to establish direct infringement and therefore, that the infringing use occurs separately and apart from their combination with systems including licensed operating systems. Not so. When the accused products are not combined with an operating system, they do not meet all of the limitations claimed in the '327 patent; specifically, they cannot perform rasterization or framebuffering. Because the accused products cannot infringe separately and apart from an operating system, the license between plaintiff and Microsoft covers the use of the accused products in combination with Microsoft Windows operating systems. Therefore, such use is licensed, it does not constitute direct infringement; and it does not give rise to a claim of indirect infringement. Defendants' motion will be granted on these grounds.

Two final comments are in order. First, plaintiff's argument regarding third party beneficiaries is misplaced. Defendants are not seeking to enforce that agreement; rather, they are identifying types of uses that cannot constitute direct infringement because they are licensed. Second, I note that plaintiff appears to read defendants' motion more broadly than

defendants intended; in its response, plaintiff argues that the *sale* of complete computer

systems by original equipment manufacturers is not protected by the Microsoft license. I

need not address this issue because defendants have not moved for summary judgment on

that ground.

E. Substantial Noninfringing Use

Defendants contend that the accused products do not contributorily infringe

plaintiff's patents because, even if they are capable of infringing use, they are "a staple article

or commodity of commerce suitable for substantial non-infringing use." 35 U.S.C. § 271(c).

In its proposed post-trial jury instructions, plaintiff concedes that it is pursuing claims for

contributory infringement only with respect to "claims 1-7 of the '327 patent and claims

1, 4, 5, 6, 8, 11, and 16 of the '200 patent." Dkt. #447 at 22. (Plaintiff did not assert

claim 7 until days before discovery closed, far too late for it to be included in the case.) As

noted above, I have already determined that no reasonable jury could find that the accused

products indirectly infringe claims 1-6, 9-12 and 15-16 of the '327 patent or 1, 4, 5, 6, 8,

11, and 16 of the '200 patent because plaintiff has adduced no evidence of direct

infringement. As discussed above, absent evidence of direct infringement with respect to

these claims, plaintiff cannot prevail on its theory of contributory infringement. DSU

Medical Corp. v. JMS Co., 471 F.3d 1293 (Fed. Cir. 2006) ("the patentee always has the

burden to show direct infringement for each instance of indirect infringement"). Therefore, I need not address the parties' arguments related to substantial non-infringing use and contributory infringement.

F. Invalidity

Defendants contend that independent claims 17 and 22 of the '327 patent are invalid because they were anticipated by prior art. They contend as well that claims 3, 10-12 and 15-16 are invalid for lack of enablement. I will address only the first issue because I have determined already that none of the accused products directly or indirectly infringe claims 3, 10-12 and 15-16 of the '327 patent. Because the only controversy involved in this case arose from plaintiff's claims of infringement, no "case or controversy" remains regarding those claims that are not infringed by defendants products. As explained previously,

> A challenge to a claim's invalidity is not an independent cause of action but a defense to a claim for infringement. Determining a claim's validity without a corresponding claim for infringement would be akin to considering a request for a declaratory judgment that the limitations period had run for a cause of action that had never been filed.

Garmin Ltd. v. TomTom, Inc., 468 F. Supp. 2d 988, 994 n.1 (W.D. Wis. 2006).

Patents are presumptively valid. 35 U.S.C. § 282. Defendants must prove invalidity by clear and convincing evidence. Connell v. Sears Roebuck & Co., 722 F.2d 1542, 1549 (Fed. Cir. 1983). Anticipation is a question of fact; summary judgment is proper only if no

reasonable jury could find that the patent was not anticipated by the prior art. Telemac Cellular Corp. v. Topp Telecom, Inc., 247 F.3d 1316, 1327 (Fed. Cir. 2001).

When addressing the question of invalidity, the court must begin with construction of the patent's claims. Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1348 (Fed. Cir. 2005). Next, the court must determine whether a prior art reference discloses each and every limitation of the claim expressly or inherently. Scripps Clinic & Research Found. v. Genentech, Inc., 927 F.2d 1565, 1576-77 (Fed. Cir. 1991). Defendants argue that "The OpenGL Graphics System: A Specification (Version 1.1) anticipates claims 17 and 22 of the '327 patent because it discloses an "Accumulation Buffer" that operates identically to the framebuffer disclosed in these claim terms.

As an initial matter, plaintiff contends that the Open GL Specification is not prior art under 35 U.S.C. § 102(b) because defendants lack evidence that it was published more than a year before the '327 patent was filed. Under § 102(b), a patent is anticipated if "the invention was . . . described in a printed publication in this . . . country . . . more than one year prior to the date of the application for patent in the United States." It is undisputed that the application for the '327 patent was filed on June 16, 1998. For the purposes of summary judgment in this case, it is also undisputed that the Open GL Specification was published on March 4, 1997, more than a year before the '327 patent was filed. Therefore, the Open GL Specification constitutes prior art.

Defendants contend that the description of the Accumulation buffer in the OpenGL specification anticipates claim 17 of the '327 patent, which discloses a method for operating on data stored in a framebuffer, and claim 22, which discloses a framebuffer apparatus for storing floating point color values.

Claim 17 recites the following limitations:

 . . . storing the data in the fame buffer in a floating point format; reading the data from the framebuffer in the floating point format; operating directly on the data in the floating point format; and writing the data to the framebuffer in the floating point format; wherein the steps of writing, storing, and reading the data in the framebuffer in the floating point are further comprised of a specification of the floating point format, wherein the specification corresponds to a level of range and precision.

Claim 22 recites the following limitations:

A computer system having a floating point framebuffer for storing a plurality of floating point color values; wherein the floating point color values are written to, read from, and stored in the framebuffer using a specification of the floating point color values that corresponds to a level of range and precision.

The parties agree that the "Accumulation Buffer" described in the OpenGL specification is a framebuffer. Defendants' expert, Dr. Andrew Wolfe, asserts that sections 4.2.3 and 4.2.4 of the Open GL specification describe the limitations regarding storing to, reading from, operating on and writing to the framebuffer in floating point format disclosed in claims 17 and 22 and that section 2.1 makes clear that "the specification . . . corresponds to a level of range and precision." Wolfe Decl., dkt. #237, at ¶¶103-08. Plaintiff's expert,

Jon Leech, takes the opposite position. Leech Decl., dkt. #263, ¶¶21-28 (stating that sections "do not teach" this). Clearly, both of these positions cannot be correct.

The parties both try to undermine the opposing expert's opinion by suggesting that their opponent doesn't *really* understand the technology disclosed by the OpenGL specification. This is of little help. Although the OpenGL specification is largely unintelligible to a layreader, it appears to contemplate the use of floating point values for certain operations; however, claims 17 and 22 disclose something more specific than the general use of floating point values in relation to a framebuffer. Instead, what is important is the storing, reading, operation on or writing of these values in the framebuffer. The parties' experts, who *are* allegedly skilled in the art, dispute sharply what key passages in the OpenGL specification mean. Thus, the question boils down to one of the experts' credibility, which is a matter for the jury, not for the court to resolve. Because I cannot conclude that no reasonable jury could find that claims 17 and 22 of the '327 patent were not anticipated by the OpenGL specification, defendants' motion for summary judgment regarding the invalidity of claims 17 and 22 will be denied.

G. Implied License

Between 2002 and 2006, the parties had an ongoing business relationship in which defendants sold plaintiff nearly 5,000 of the accused products. Plaintiff designed their

products to incorporate these products, which it purchased at a reduced rate. In exchange, it touted the value of the accused products and helped develop the market for them. Defendants contend that this relationship created an "implied license," which bars all of plaintiff's infringement claims.

An "implied license" signifies a patentee's waiver of the statutory right to exclude others from making, using, selling, offering to sell or importing the patented invention. Wang Laboratories, Inc. v. Mitsubishi Electronics America, Inc., 103 F.3d 1571, 1580 (Fed. Cir. 1997). An implied license may arise by equitable estoppel, acquiescence, conduct, or legal estoppel. Wang Laboratories, 103 F.3d at 1581. An implied license by equitable estoppel requires proof that (1) the patentee, through statements or conduct, gave an affirmative grant of consent or permission to make, use, or sell to the alleged infringer; (2) the alleged infringer relied on that statement or conduct; and (3) the alleged infringer would, therefore, be materially prejudiced if the patentee is allowed to proceed with its claim. Id. at 1581. The Court of Appeals for the Federal Circuit has noted that judicially imposed licenses are "rare," id. and that the circumstances must "plainly indicated that the grant of a license should be inferred." Monsanto Co. v. Scruggs, 459 F.3d 1328, 1334 (Fed. Cir. 2006).

The existence of an implied license is an affirmative defense to a claim of patent infringement. Monsanto Co., 459 F.3d at 1334. Thus, at summary judgment, the burden

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is on defendants to demonstrate that no reasonable jury could conclude that an implied

license was *not* established. E.g., Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986).

In this case, defendants have not made a showing that this is the "rare" case in which the

court should impose a license when the parties did not form an explicit agreement.

In Wang Laboratories, the court of appeals imposed a implied license on the basis of

the parties' "entire course of conduct," 103 F.3d at 1581, which is what defendants are

asking the court to do in this case. In that case, the patentee approached the defendant

about making computer memory modules. At the patentee's encouragement, defendant

decided to make the modules, which it sold to the patentee and others. The patentee never

disclosed his patents or discussed a licensing agreement with defendant. Two years after

defendant began production of the modules, the patentee accused defendant of infringing

two patents which the patentee owned (one of which he developed while defendant was

manufacturing the products for him).

Given the egregious nature of the patentee's conduct throughout his dealings with the

defendant, it is unsurprising that the court of appeals was willing to impose a judicially

created license to bar the patentee's claims against defendant. Here, defendants have not

established that the past relationship of the parties supports such a finding.

There are several important differences between that case and this one. First,

defendants did not enter the market at plaintiff's encouragement or coaxing. Given the

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timing of events, it is highly likely that defendants were preparing to "launch" the accused

products whether or not they entered into an agreement to sell the products to plaintiff. The

agreement allowed plaintiff to purchase defendants' products at a lower cost than regular

customers, but was also a boon to defendants, who sold plaintiff 5,000 units of the accused

products and enjoyed plaintiff's promotion of defendants' product line.

Next, the agreement makes it clear that relationship of the parties was that of a valued

vendor and a customer. Defendants argue that the relationship was more akin to a formal

"partnership," but their evidence on this point is weak.   The only evidence they can muster

are statements plaintiff made in a letter proceeding the formal agreement (representations

that are explicitly *not* part of the agreement because of a merger clause) and a statement by

an "industry commentator" regarding SGI-ATI products. This falls far short of establishing

that there was, in fact, a formal partnership between the companies.

It is not surprising that defendants believe it is unfair for a former long-term customer

to bring accusations of patent infringement against the very products it previously purchased

and touted to others. But this is an insufficient reason to take the drastic measure of

imposing a license where the parties clearly never contemplated one.

H. Judicial Estoppel

Defendants contend that the doctrine of judicial estoppel should bar plaintiff from

pursuing its claims against them because plaintiff did not make a proper disclosure of the existence of these claims to the bankruptcy court. The doctrine of judicial estoppel is intended to "protect the integrity of the judicial process" and prevent "parties from playing fast and loose with the courts," New Hampshire v. Maine, 532 U.S. 742, 749-50 (2001), by prohibiting parties from "asserting a claim in a legal proceeding that is inconsistent with a claim taken by that party in a previous proceeding." Id. at 749 (quoting 18 Moore's Federal Practice § 134.30, at 134-62 (3d ed. 2000)).

The Supreme Court has identified several non-exclusive factors that guide a court's decision whether to apply judicial estoppel: (1) the party's later position must be "clearly inconsistent" with its earlier position; (2) the party must have succeeded in persuading a court to adopt the earlier position, thereby posing a "risk of inconsistent court determinations"; and (3) "the party seeking to assert an inconsistent position would derive an unfair advantage or impose an unfair detriment on the opposing party if not estopped." Id. at 750-51.

Section 521(a)(1) of the bankruptcy code requires a debtor to disclose to the bankruptcy court "a schedule of assets and liabilities, a schedule of current income and current expenditures, and a statement of the debtor's financial affairs." 11 U.S.C. § 521(a)(1). In Cannon-Stokes v. Potter, 453 F.3d 446 (7th Cir. 2006), the court of appeals held that "a debtor in bankruptcy who denies owning an asset, including a chose in action

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or other legal claim, cannot realize on that concealed asset after the bankruptcy ends." Id.

at 448. (To determine whether the doctrine bars plaintiff's claims in this case, I must

consider the precedent of the Court of Appeals for the Seventh Circuit. Transclean Corp.

v. Jiffy Lube Internationall, Inc., 474 F.3d 1298, 1307 (Fed. Cir. 2007) (applying law of

"applicable regional circuit" when considering claim of judicial estoppel).)

In Cannon-Stokes, the debtor "expressly denied that she had any valuable legal

claims" when she filed her bankruptcy petition by leaving blank a portion of the schedule

of assets which required her to list "contingent and unliquidated claims of every nature." Id.

at 447. In fact, she was pursuing administrative remedies against her former employer for

failing to provide her proper accommodation and retaliating against her for asserting her

statutory rights. Id. Debtor received a discharge of her debts on the basis of her

representations to the bankruptcy court. Id. Shortly thereafter, debtor attempted to bring

a lawsuit in federal court asserting her employment claims against her former employer. Id.

The court of appeals held that the doctrine of judicial estoppel barred her from bringing the

subsequent lawsuit after she had denied the existence of her claims during the bankruptcy

proceedings. Id. at 448. The court reasoned that barring the lawsuit on these grounds

would "induce[] debtors to be truthful in their bankruptcy filings . . . ." Id.

This case is readily distinguishable from Cannon-Stokes. Plaintiff did not deny that

it had any assets in the form of legal claims. To the contrary, it disclosed in its list of assets

"confidential patent infringement" in an "undetermined amount." Although this is not a

model of clarity, it could have raised a red flag for any creditor concerned that the proposed

plan provided it with too little compensation. This did not happen. Instead, the bankruptcy

court determined that the disclosures complied with the requirements of the bankruptcy

code. In Cannon-Stokes, the debtor did not provide the creditors with such an opportunity

because she failed to disclose *any* potential claims, even though she was in the process of

airing claims in administrative proceedings.

However, the problem with defendants' argument is more fundamental than whether

it matches up with the particular facts of controlling Seventh Circuit case law. The Supreme

Court has said that judicial estoppel is appropriate when a party takes positions in judicial

proceedings that are "clearly inconsistent." New Hampshire, 532 U.S. at 750. It is not

"clearly inconsistent" for a party to tell the bankruptcy court that one of its assets is

"confidential patent litigation" and to later bring a lawsuit in which it alleges patent

infringement.

I. Inequitable Conduct

Defendants accuse plaintiff of intentionally omitting material information from the

'327 patent application. Plaintiff has moved for summary judgment on defendants'

counterclaim. In its brief in response to plaintiff's motion, defendant "invites" the court to

grant summary judgment to it on its inequitable conduct claims. I will deny both motions

because I conclude that triable issues remain.

Before discussing plaintiff's motion for summary judgment, it is important to

establish exactly what is before the court. First, in their response to plaintiff's motion for

summary judgment, defendants raise several issues not covered by plaintiff's motion.

Specifically, defendants contend that plaintiff's failure to disclose prior art regarding

"OpenGL" and "RenderMan" constitutes inequitable conduct. As plaintiff points out in its

reply, this is problematic, because defendants' inequitable conduct counterclaim does not

mention OpenGL or RenderMan.

As the Court of Appeals for the Federal Circuit has stated recently, inequitable

conduct must be pleaded with particularity. Central Admixture Pharmacy Services, Inc. v.

Advanced Cardiac Solutions, P.C., 482 F.3d 1347, 1356 (Fed. Cir. 2007). Defendants did

not include these theories of inequitable conduct in their original or amended counterclaims

and they never moved to amend their counterclaims to include them; therefore, they are not

part of this case. Because I have not considered defendants newly-asserted inequitable

conduct claims, I have not considered plaintiff's late-filed facts in response. Therefore,

defendants' motion to strike these facts, dkt. #295, will be denied as unnecessary. Next,

defendants also discuss International Application Number PCT/US98/20096 in their

counterclaim, but do not raise the issue at summary judgment. Therefore, I will consider

that counterclaim waived.

All that remains to address is defendants' contention that plaintiff engaged in inequitable conduct by failing to disclose the application that became U.S. Patent No. 6,567,083 (the '083 patent). Dfts.' Ans. and Counterclaim, dkt. #148, at ¶¶16-18. The law governing inequitable conduct in the course of patent prosecution is clear: "Inequitable conduct resides in failure to disclose material information, or submission of false material information, with an intent to deceive, and those two elements, materiality and intent, must be proven by clear and convincing evidence." Kingsdown Medical Consultants, Ltd. v. Hollister, Inc., 863 F.2d 867, 872 (Fed. Cir. 1988) (citing J. P. Stevens & Co., Inc. v. Lex Tex Ltd., Inc., 747 F.2d 1553, 1559 (Fed. Cir. 1984)); see also Old Town Canoe Company v. Confluence Holdings Corp., 448 F.3d 1309, 1322 (Fed. Cir. 2006).

Information is material when:

it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in:

(i) Opposing an argument of unpatentability relied on by the Office, or

(ii) Asserting an argument of patentability.

37 C.F.R. § 1.56(b).

"[M]ateriality does not presume intent, which is a separate and essential component of inequitable conduct." Atofina v. Great Lakes Chemical Corp., 441 F.3d 991, 1001 (Fed. Cir. 2006) (internal citations omitted). "Intent" commonly means: "'Design, resolve, or determination with which [a] person acts[; a] state of mind in which a person seeks to accomplish a given result through a course of action.'" Molins PLC v. Textron, 48 F.3d 1172, 1181 (Fed. Cir. 1995) (quoting Black's Law Dictionary at 810 (6th ed. 1990)). "To satisfy the intent to deceive element of inequitable conduct, 'the involved conduct, viewed in light of all the evidence, including evidence indicative of good faith, must indicate sufficient culpability to require a finding of intent to deceive.'" Paragon Podiatry Lab. v. KLM Lab., 984 F.2d 1182, 1190 (Fed. Cir. 1993) (quoting Kingsdown, 863 F.2d at 876). Intent can seldom be proven by direct evidence; it "must generally be inferred from the facts and circumstances surrounding the applicant's overall conduct." Paragon, 984 F.2d at 1190. However, "'given the ease with which a relatively routine act of patent prosecution can be portrayed as intended to mislead or deceive, clear and convincing evidence of conduct sufficient to support an inference of culpable intent is required.'" Molins, 48 F.3d at 1181 (quoting Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 939 (Fed. Cir. 1990)).

The facts presented by the parties are lengthy, but they boil down to a relatively

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simple timeline. In 1996 and 1997, inventors at SGI developed technology that provided the base for the '327 patent application and the '083 patent application. The '083 patent application was filed in September 1997. The '327 patent application was filed in June 1998. The inventors of the '327 and '083 patent differ, but some of the diagrams included in the specifications are similar.

Michael Messinger, a lawyer who was intimately involved with the prosecution of the '083 patent before it was assigned to Microsoft in September 2001, became involved with the prosecution of the '327 patent in 2002 and 2003. Messinger's involvement with the prosecution of the '327 patent was relatively limited. He supervised the work of junior attorneys and signed six documents submitted to the Patent and Trademark Office. Messinger did not disclose the '083 patent or patent application to the Patent and Trademark Office.

None of the claims of the '083 patent disclose a "floating point framebuffer" specifically; however, the patent specification discusses its use in conjunction with the patented product. During prosecution of the '327 patent, plaintiff filed a continuation application. The parties dispute whether claims presented during the continuation of the '327 patent are "narrower" in scope than those included in claims 17 and 22 of the patent. Several of these allegedly "narrower" claims were rejected by the examiner in reliance on the '083 patent. The parties' experts dispute whether a provisional rejection

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based on the '083 patent would have been appropriate during prosecution of the '327 patent.

As the party asserting inequitable conduct, defendants bear the burden of adducing evidence that the '083 patent was a material prior art reference that should have been disclosed to the Patent and Trademark Office and that Messinger had the requisite intent when he failed to make the disclosure. Although I find defendants' evidence somewhat scant on this point, I find they have raised a legitimate factual dispute whether the '083 application constitutes prior art, that it was material to the '327 application and that Messinger knew about and chose not to disclose the reference to the Patent and Trademark Office.

First, given the facts currently presented, I cannot conclude as a matter of law that the '083 patent application was not appropriate prior art under 35 U.S.C. § 102(e). The parties dispute the specific timeline of the development of the '083 patent application and the '327 patent and whether it could have been used by the patent office to issue a provisional rejection of the '327 patent. In addition, the parties' experts disagree about whether the reference was material in nature. The patent examiner considering the continuation found it material and rejected some claims of the continuation as a result. Defendants' expert avers that the reference "establishes by itself or in combination with other information, a prima facie case of unpatentability of [the] claim."

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Finally, turning to the element of intent, I note that Messinger had been intimately involved with the prosecution of the '083 patent and discontinued his work on that patent only a year before he began his work in prosecuting the '327 patent. Although there are many possible reasons for Messinger's failure to disclose the '083 application during the prosecution of the '327 patent, it is possible that he intended to keep the '083 from the patent examiner to make approval of the '327 patent more likely. Therefore, I will deny plaintiff's motion for summary judgment. Given that this is hardly a "slam dunk" for defendants, I will deny their "invitation" to grant summary judgment on their behalf as well.

ORDER

The motion for summary judgment of defendants ATI Technologies, Inc., ATI Technologies ULC, and Advanced Micro Device, Inc., is GRANTED on the following grounds: (1) the accused products do not indirectly infringe claims 1-6, 9-12 and 15-16 of the '327 patent and claims 1, 4-6, 8, 11 and 16 of the '200 patent; (2) the accused products do not directly infringe claims 3, 10-12, and 15-16 of the '327 patent; and (3) the accused products do not indirectly infringe the '327 or '200 patents when used by Microsoft-licensed users in combination with a Microsoft operating system. The motion is DENIED in all other respects.

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Plaintiff's allegations of direct infringement of claims 1, 2, 4-6 and 9 of the '327 patent are DISMISSED on the court's own motion.

The motion for summary judgment of plaintiff Silicon Graphics, Inc. regarding defendants' counterclaim for inequitable conduct is DENIED.

Defendants' motion to strike plaintiff's late-filed facts in support of its motion for summary judgment, dkt. #295, is DENIED as unnecessary.

Entered this 30th day of January, 2008.

BY THE COURT:
/s/
BARBARA B. CRABB
District Judge

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